

CLAIMS

We claim:

- 1 1. A method of analyzing genetic expression comprising the steps of:
2 liquefying a complex biological construct;
3 transferring said solution to a microarray; and
4 determining gene expression.

- 1 2. The method of Claim 1 wherein the complex biological construct is a gross
2 anatomical structure of an animal comprising more than one type of tissue.

- 1 3. A method of analyzing genetic expression comprising the steps of:
2 placing a complex biological construct into a chamber;
3 liquefying said complex biological construct in said chamber wherein a solution is
4 formed;
5 removing said solution from said chamber; and
6 purifying said solution and extracting and isolating genetic molecules.

- 1 4. The method of Claim 3 further comprising the step of inserting a component into
2 said chamber wherein said component ruptures the cells of said complex biological component.

1 5. The method of Claim 3 further comprising the step of preparing gene expression
2 analysis.

1 6. The method of Claim 4 wherein said gene expression analysis includes an
2 analysis of gene function.

1 7. The method of Claim 3 wherein genetic molecules are placed in a microarray for
2 matching known and unknown genetic molecules.

1 8. An apparatus for performing the method of Claim 1, comprising:
2 a component;
3 a chamber; and
4 a means for applying force to said chamber wherein said component liquefies the
5 complex biological construct and genetic molecules are release intact.

1 9. A method of analyzing genetic expression comprising the steps of:
2 pulverizing a complex biological construct;
3 transferring said solution to a microarray; and
4 determining gene expression.

1 10. The method of Claim 9 wherein the complex biological construct is a gross
2 anatomical structure of an animal comprising more than one type of tissue.

1 11. A method of analyzing genetic expression comprising the steps of:
2 placing a complex biological construct into a chamber;
3 pulverizing said complex biological construct in said chamber wherein a solution is
4 formed;
5 removing said solution from said chamber; and
6 purifying said solution and extracting and isolating genetic molecules.

1 12. The method of Claim 11 further comprising the step of inserting a component into
2 said chamber wherein said component ruptures the cells of said complex biological component.

1 13. The method of Claim 11 further comprising the step of preparing gene expression
2 analysis.

1 14. The method of Claim 13 wherein said gene expression analysis includes an
2 analysis of gene function.

1 15. The method of Claim 11 wherein genetic molecules are placed in a microarray for
2 matching known and unknown genetic molecules.

1 16. An apparatus for performing the method of Claim 1 comprising:
2 a component;
3 a chamber; and
4 a means for applying force to said chamber wherein said component pulverizes the
5 complex biological construct and genetic molecules are release intact.

1 17. An apparatus for performing the method of Claim 9 comprising:
2 a component;
3 a chamber; and
4 a means for applying force to said chamber wherein said component pulverizes the
5 complex biological construct and genetic molecules are release intact.

1 18. A method for extraction and isolation of genetic molecules for use in the analysis
2 of genetic expression comprising the steps of
3 liquefying a complex biological construct into solution having complete and
4 uncontaminated genetic molecules;
5 transferring said solution to a microarray; and
6 determining gene expression.

1 19. The method of Claim 18 wherein the complex biological construct is a gross
2 anatomical structure of an animal comprising more than one type of tissue.

1 20. A method for extraction and isolation of genetic molecules from animal tissue for
2 use in the analysis of genetic expression comprising the steps of:
3 placing a complex biological construct into a chamber;
4 liquefying said complex biological construct in said chamber wherein a solution is
5 formed;
6 removing said solution from said chamber; and
7 purifying said solution to extract and isolate genetic molecules.

1 21. The method of Claim 20 further comprising the step of inserting a component into
2 said chamber wherein said component ruptures the cells of said complex biological component.

1 22. The method of Claim 20 further comprising the step of preparing gene expression
2 analysis.

1 23. The method of Claim 20 wherein said gene expression analysis includes an
2 analysis of gene function.

1 24. The method of Claim 20 wherein genetic molecules are placed in a microarray for
2 matching known and unknown genetic molecules.

1 25. A method of extracting genetic molecules from an animal comprising the steps of:
2 isolating a complex biological construct;
3 freezing said construct to prevent nucleic acid degradation;
4 inserting said construct into a chamber fitted with a component wherein said component
5 ruptures the cells of said construct to release genetic molecules and form a solution;
6 applying force to said chamber;
7 removing said solution from said chamber wherein said solution contains pure and
8 uncontaminated genetic molecules; and,
9 freezing said solution for subsequent gene expression analysis.

1 26. A method of isolating RNA from an animal comprising the steps of:
2 isolating a complex biological construct;
3 freezing said complex biological construct to prevent degradation of the RNA;
4 liquefying said complex biological construct into a solution wherein RNA remains intact;
5 and
6 freezing said solution prior to purification for subsequent gene expression analysis.

1 27. An apparatus for reducing a complex biological construct from an animal into
2 solution containing genetic molecules comprising:

3 a component for rupturing the cells of the complex biological construct and forming a
4 solution;

5 a chamber for holding said complex biological construct wherein chamber is designed to
6 allow free movement of said component through chamber; and

7 a means for applying force to said chamber wherein the complex biological construct is
8 liquefied with said component to release genetic molecules intact.

1 28. An apparatus for performing the method of Claim 18, comprising:

2 a component;

3 a chamber; and

4 a means for applying force to said chamber wherein said component liquefies the
5 complex biological construct and genetic molecules are release intact.

1 29. A method for extraction and isolation of genetic molecules for use in the analysis
2 of genetic expression comprising the steps of

3 pulverizing a complex biological construct into solution having complete and
4 uncontaminated genetic molecules;

5 transferring said solution to a microarray; and

6 determining gene expression.

1 30. The method of Claim 29 wherein the complex biological construct is a gross
2 anatomical structure of an animal comprising more than one type of tissue.

1 31. A method for extraction and isolation of genetic molecules from animal tissue for
2 use in the analysis of genetic expression comprising the steps of:

3 placing a complex biological construct into a chamber;

4 pulverizing said complex biological construct in said chamber wherein a solution is
5 formed;

6 removing said solution from said chamber; and

7 purifying said solution to extract and isolate genetic molecules.

1 32. The method of Claim 31 further comprising the step of inserting a component into
2 said chamber wherein said component ruptures the cells of said complex biological component.

1 33. The method of Claim 31 further comprising the step of preparing gene expression
2 analysis.

1 34. The method of Claim 31 wherein said gene expression analysis includes an
2 analysis of gene function.

1 35. The method of Claim 31 wherein genetic molecules are placed in a microarray for
2 matching known and unknown genetic molecules.

1 36. A method of extracting genetic molecules from an animal comprising the steps of:
2 isolating a complex biological construct;
3 freezing said construct to prevent nucleic acid degradation;
4 inserting said construct into a chamber fitted with a component wherein said component
5 ruptures the cells of said construct to release genetic molecules and form a solution;
6 applying force to said chamber;
7 removing said solution from said chamber wherein said solution contains pure and
8 uncontaminated genetic molecules; and,
9 freezing said solution for subsequent gene expression analysis.

1 37. A method of isolating RNA from an animal comprising the steps of:
2 isolating a complex biological construct;
3 freezing said complex biological construct to prevent degradation of the RNA;
4 pulverizing said complex biological construct into a solution wherein RNA remains
5 intact; and
6 freezing said solution prior to purification for subsequent gene expression analysis.

1 38. An apparatus for reducing a complex biological construct from an animal into
2 solution containing genetic molecules comprising:
3 a component for rupturing the cells of the complex biological construct and forming a
4 solution;
5 a chamber for holding said complex biological construct wherein chamber is designed to
6 allow free movement of said component through chamber; and
7 a means for applying force to said chamber wherein the complex biological construct is
8 liquefied with said component to release genetic molecules intact.

1 39. An apparatus for performing the method of Claim 29, comprising:
2 a component;
3 a chamber; and
4 a means for applying force to said chamber wherein said component pulverizes the
5 complex biological construct and genetic molecules are release intact.